

Powers of Ten

First, we will focus on numbers that are only 1's and 0's

	Standard form	Exponent Form
One hundred million	100 000 000	10^8
Ten million	10 000 000	10^7
One Million	1 000 000	10^6
One Hundred Thousand	100 000	10^5
Ten thousand	10 000	10^4
One Thousand	1 000	10^3
One Hundred	100	10^2
Ten	10	10^1

Practice (try it with your neighbours) in your homework book.
Please put the date first, and the title "Practice".

1a) Express each as a power of ten

10 000 =

10^4

10 000 000 =

10^7

10x10x10x10 =

10^4

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2) Write in standard form

$10^5 =$

100 000

or $10 \times 10 \times 10 \times 10 \times 10 = 100\,000$

3) A student says $10^6 - 10^4 = 10^2$. What would you tell this student and why? (be nice.)

$1\,000\,000 - 10\,000 \neq 100$

4) Add.

$10^2 + 10^3 =$

$100 + 1000 = 1100$

Expanded Form....

$$31\,964\,434 = 30\,000\,000 + 1\,000\,000 \\ + 900\,000 + 60\,000 + 4\,000 \\ + 400 + 30 + 4$$

$$= 3 \times 10\,000\,000 + 1\,000\,000 \\ + 9 \times 100\,000 + 6 \times 10\,000 \\ + 4 \times 1\,000 + 4 \times 100 + 3 \times 10 + 4$$

$$= 3 \times 10^7 + 10^6 + 9 \times 10^5 + 6 \times 10^4 \\ + 4 \times 10^3 + 4 \times 10^2 + 3 \times 10^1 + 4 \times 10^0$$

$$26\ 322\ 845 =$$

$$2 \times 10^7 + 6 \times 10^6 + 3 \times 10^5 =$$

$$30\ 001\ 206 =$$

$$3 \times 10\ 000\ 000 + 1 \times 1000 + 2 \times 100 + 6$$

